

### REMARKS

Claims 1-6, 8-23, 27-28, and 30-36 remain pending after entry of this amendment. Claims 24 and 25 have been allowed by the Examiner. Claims 7 and 29 have been cancelled. Claims 1 and 26 have been amended herein. The claims were amended to more fully clarify the claimed subject matter. No new matter has been added. Favorable reconsideration is respectfully requested in light of the amendments and remarks submitted herein.

Claims 32-36 have been added. These independent claims contain the subject matter of dependant claims 12, 12, 15, 17, and 28, which Examiner stated would be allowable if rewritten in independent form. No new matter has been added. Applicant thanks the Examiner for the notation that these claims are allowable.

Claims 1, 2, 4-6, 9, 10, 18, 22, 29, and 30 are rejected under 35 U.S.C. § 102(b) as being anticipated by Zukowski (5,462,781). Applicant respectfully traverses this rejection.

Claims 1-6, 18, 22, 29, and 30 are rejected under 35 U.S.C. § 102(b) as being anticipated by White (5,348,788). Applicant respectfully traverses this rejection.

Claims 26, and 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by Schumacher (DE 29521058). Applicant respectfully traverses this rejection.

Claims 14 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zukowski in view of Walser (DE 953831). Applicant respectfully traverses this rejection.

Claims 7, 8, 11, and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zukowski. Applicant respectfully traverses this rejection.

Claims 19-21 and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zukowski in view of Dunn (5,599,552). Applicant respectfully traverses this rejection.

### Rejection under 35 U.S.C. § 102

Claims 1, 2, 4-6, 9, 10, 18, 22, 29, and 30 are rejected under 35 U.S.C. § 102(b) as being anticipated by Zukowski. Applicant respectfully traverses this rejection. Claim 29 has been cancelled. Claim 1 has been amended to more clearly point out the invention claimed. Specifically, claim 1 has been amended to clarify that the membrane has a surface of less than 100 mm<sup>2</sup>. Amended claim 1 is novel over Zukowski. Zukowski discloses a porous polytetrafluoroethylene material (PTFE). The surface of said material is treated to result in a surface with a higher hydrophobicity (column 3, lines 59ff). The porous PTFE material can have

the form of thin membranes (column 4, lines 5ff). Possible medical uses of the PTFE material are described in column 5, lines 49-61. Zukowski discloses that the surface treatment leads to a surface with increased roughness (Column 9, lines 45ff). Zukowski does not disclose a membrane having a size of less than  $100 \text{ mm}^2$  and its use for the capping of a pulp exposure in the cavity of a tooth. Therefore, the feature "a size of less than  $100 \text{ mm}^2$ " added to claim 1 distinguishes claim 1 from Zukowski. Claims 2, 4-6, 9, 10, 18, 22, 29, and 30 are dependent on claim 1, and thus contain all the limitations of claim 1, and are likewise patentable over Zukowski.

Claims 1-6, 18, 22, 29, and 30 are rejected under 35 U.S.C. § 102(b) as being anticipated by White. Applicant respectfully traverses this rejection. Claim 29 has been cancelled. Claim 1 has been amended to more clearly point out the invention claimed. Specifically, claim 1 has been amended to clarify that the membrane has a surface of less than  $100 \text{ mm}^2$ . Amended claim 1 is also novel over White. White discloses a porous article comprising a network of pores and protrusions. The porous article is created by stacking a mesh in layers wherein the sequence of the layers is alternated (column 4, lines 6-10). The pore diameter of the mesh ranges between 25 to  $1000 \mu\text{m}$  (column 2, lines 42-45). The medical uses of said article are described in column 1, lines 47ff. White does not disclose that a medical membrane can be used for the capping of a pulp exposure in the cavity of a tooth. White does not disclose a medical membrane but a porous article that has a three-dimensional network. Even if the mesh forming said porous article is regarded as medical membrane, White does neither disclose that the mesh forming said article has a roughened surface nor the size of the mesh. Therefore, the features "roughened surface" and "a size of less than  $100 \text{ mm}^2$ " distinguish claim 1 from White. Claims 2-6, 18, 22, 29, and 30 are dependent on claim 1, and are likewise patentable over White.

Claims 26, and 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by Schumacher. Applicant respectfully traverses this rejection. Claim 26 has been amended to more clearly point out the invention claimed. Figure 5 of Schumacher shows an inlay in a tooth cavity. The inlay is inserted in the cavity with forceps (see as well figure 6). The inlay is not fixed to the forceps but held by them. This is confirmed by the text on page 4, which describes figure 5. Claim 26 is novel over Schumacher due to the feature "removably fixed." Claim 27 is novel over Schumacher due to its dependence on claim 26.

Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claims 1-6, 9, 10, 18, 22, 26, 27, and 30 under 35 U.S.C. §102(b).

**Rejections under 35 U.S.C. § 103**

Claims 14 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zukowski in view of Walser. Claims 7, 8, 11, and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zukowski. Claims 19-21 and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zukowski in view of Dunn. Applicant respectfully traverses this rejection. Claim 1 has been amended to more clearly point out the invention claimed. Claim 7 has been cancelled.

Applicant reiterates the comments offered above regarding Zukowski and respectfully asserts that Zukowski does not disclose or suggest a membrane having a size of less than 100 mm<sup>2</sup> and its use for the capping of a pulp exposure in the cavity of a tooth. Therefore, Applicant respectfully requests that this rejection be withdrawn.

The subject matter of claim 1 of the present invention differs from Zukowski by its disclosure of a size of less than 100 mm<sup>2</sup>. A medical membrane having a size of less than 100 mm<sup>2</sup> allows it to improve the preservation of the vitality of an exposed pulp in a tooth cavity. The technical problem to be solved by the present invention is to provide a means that improves the preservation of an exposed pulp in a tooth cavity. This problem is solved by the subject matter of claim 1. Zukowski describes that the porous expanded PTFE material can be used for repairing blood vessels and for guided tissue regeneration in connection with dental implants (column 5, lines 49ff). The use of the PTFE material in connection dental implants allows the regeneration of the tissue surrounding the dental implant i.e. the gingival tissue. The sizes of the medical membrane of the present invention is a critical factor because the medical membranes of the prior art do not provide means that allow the preservation of an exposed pulp in a tooth cavity due to their inappropriate size. Therefore, the size of the medical membrane of the present invention is by no means an obvious design choice as asserted by the examiner but a critical factor to solve the technical problem of the present invention that is not suggested to a person of skill in the art by Zukowski. Zukowski only describes extradental uses for medical membranes and a person of skill in the art cannot derive any information from Zukowski suggesting that a

medical membrane with a size of less than 100 mm<sup>2</sup> is a means for the protection of an exposed pulp inside a tooth cavity. Therefore, claim 1 is non-obvious in view of Zukowski.

The references to Walser and Dunn likewise do not remedy the defects in Zukowski. Neither Walser nor Dunn suggest or teach a membrane that has a surface of at less than 100 mm<sup>2</sup> or any benefit of such a membrane or any reason to combine with Zukowski. Further, Zukowski clearly does not teach an adhesive coating to adhere to the membrane. Although Walser discloses insulating layers with adhesive surfaces for the protection of pulp against thermal and chemical irritations, there is no discussion or suggestion about the surface structure of the insulation layer. Thus, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to provide the membrane with adhesive properties and mount the membranes on a carrier sheet, in view of Walser, so that the membrane may be more securely held on the tissue. Therefore, Walser fails to remedy the deficiencies of Zukowski and Applicant respectfully requests that this rejection be withdrawn. Further, Zukowski does not disclose the use of a resorbable material to form the membrane, and Dunn does not remedy this defect in Zukowski. There is no suggestion to combine, and no reasonable expectation of success, and Examiner has provided none.

Claims 8, 11, 14, 16, 19-21, 23, and 31 are dependent on amended claim 1, and for the foregoing reasons are non-obvious. To make out a *prima facie* case of obviousness under 35 U.S.C. § 103(a), there must exist some motivation, either generally available to one of ordinary skill in the art or expressly stated in the prior art, to modify the known prior art to arrive at the claimed invention. Examiner has failed to state a motivation generally available to one skilled in the art to modify the cited prior art to obtain the claimed invention. Additionally, the cited prior fails to articulate such a motivation. Thus, Zukowski, Walser, and Dunn cannot serve as a proper basis for a rejection under 35 U.S.C. § 103(a). In view of the above comments, it is submitted that a *prima facie* case of obviousness has not been established. For the foregoing reasons, Applicant respectfully requests that the Examiner withdraw the rejection of claims 8, 11, 14, 16, 19-21, 23, and 31 under 35 U.S.C. §103(a).


**Conclusion**

Claims 1-6, 8-23, 26-28, and 30-36 remain pending in the application. In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance. All claims are believed to be allowable for the reasons set forth above. Early notice to this effect is earnestly solicited. This amendment is believed to be responsive to all points raised in the Office Action. There may be additional reasons to allow the claims and Applicant reserves the right to raise them at a later date. Accordingly, Applicant respectfully requests prompt reconsideration, allowance, and passage of the application to issue. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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